

REMARKS

The Applicants have now had an opportunity to carefully consider the remarks set forth in the Office Action mailed December 16, 2004. Reexamination and reconsideration of the application in light of the following remarks is respectfully requested.

In the Drawings

The Applicants submitted a replacement sheet making corrections to FIG. 1 as part of Applicants' Amendment A which was mailed August 30, 2004. The present Office Action does not acknowledge the submission of the replacement sheet. An indication of the acceptability of the submitted replacement sheet is respectfully requested.

The Office Action

In the Office Action mailed December 16, 2004:

claims 1-3 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,801,334 B1 to Enomoto ("Enomoto"); and

claims 4 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Enomoto and further in view of the paper entitled Refinement of Printer Transformations Using Weighted Regression by Raja Balasubramanian and Martin S. Maltz ("Balasubramanian-1996") and U.S. Patent No. 5,612,902 to Stokes ("Stokes").

The Present Application

By way of brief review, the present application is directed towards systems and methods for detecting probable errors or glitches in color measurements and providing replacement values for such erroneous measurements. For example, document processors rely on color measurements as feedback in color rendering control loops. Erroneous measurements can cause instability in such control loops.

The subject matter of the present application attempts to detect erroneous measurements, caused by noise or other occasional sensor glitches, and replaces such erroneous sensor readings with substitute values that are closer to a correct value than the detected erroneous value.

For example, a color producing system is modeled. The model is used to

predict sensor readings. If the actual sensor reading is reasonably close to the predicted sensor reading, then the actual sensor reading is deemed to be accurate and is used for its intended purpose. For example, the sensor reading is used as feedback in one or more control loops. If the actual sensor reading is not reasonably close to the predicted sensor reading, then the actual sensor reading is deemed to be erroneous and it is replaced with another value. For example, the sensor reading is replaced with the predicted sensor reading, or with historical data associated with the same or a similar input value.

The Newly Cited Reference

In stark contrast, the primary reference of the Office Action to Enomoto allegedly discloses an index print producing method and an image processing system in which an index print can be produced which has a plurality of images disposed in a predetermined layout such that the finished state of the main image of each image can easily be recognized.

Aspects of the method and system of Enomoto allegedly include providing an image processing method and image processing device with which an image can be printed with no portions of the main object missing even if the main object, such as the face of a person, exists adjacent to an edge of the image when aberrations of the image read from a photographic film are corrected, providing the capability of specifying an appropriate extraction range when a portion is extracted and output from an image which is undergoing the image processing which accompanies a change in the shape of the outline of the image, providing the capability of rapidly correcting distortion aberration or chromatic aberration or magnification of image data, and preventing image voids from occurring in an output image (column 5, line 45 – column 6, line 3).

The Office Action asserts that steps associated with reference numerals 200 – 226 and 230 and 232 anticipate the claims of the present application. However, the referenced steps are illustrated in FIGS. 4A, 4B and 4C of Enomoto. FIGS. 4A, 4B and 4C are flow charts showing the content of a pre-scanning processing which is performed in the image processing section of the system of Enomoto according to a first embodiment (column 20, lines 1-4).

It is respectfully submitted that nothing in the description of the pre-scanning processing of Enomoto or in Enomoto as a whole, discloses or suggests

implementing a model of a color producing process, monitoring an input to the color producing process, predicting an expected color signal based on the model and the monitored input, measuring an output color produced by the color producing process to produce a measured color signal, comparing the measured color signal to the expected color signal to produce a color error value and selectively replacing the measured color signal based on the color error value as disclosed in the present specification and recited in the claims of the present application. Clarification is respectfully requested.

The Claims are Not Anticipated

Claims 1-3 were rejected under 35 U.S.C. §102(e) as being anticipated by Enomoto.

However, in explaining the rejection of **claim 1**, the Office Action asserts that Enomoto discloses a method of processing transient errors (such as printer drift) and directs the attention of the Applicants to page 334. However, it is respectfully submitted that Enomoto does not disclose or suggest a method of processing transient errors. Furthermore, Enomoto does not include 334 pages or a page numbered 334. Instead, Enomoto includes 78 columns of text and 32 sheets of drawings. Clarification is respectfully requested.

Additionally, the Office Action asserts that Enomoto discloses implementing a model of a color producing process and directs the attention of the Applicants to steps 200, 202, 204 and 208 in support of this assertion. However, steps 200-208 are part of a pre-scan processing and are unrelated to implementing a model of a color producing process. In step 200, the line scanner correcting section subjects pre-scan data input from the line CCD scanner to darkness correction, density correction, shading correction and defective-pixel correction. Pre-scan data output from the line scanner correcting section is input to the automatic set-up engine via the selector. In step 202, the recording position (the frame position) of the film image on the photographic film is determined on the basis of the pre-scan data input from the line CCD scanner. On the basis of the determined frame position, pre-scan image data corresponding to the position of the recorded film image is cut (column 35, line 64 – column 36, line 8).

The digital laboratory system of Enomoto according to the embodiment described in relation to these steps enables a film scanner of a different type from

the type of the line CCD scanner to be connected. In this system, scan data which is input to the image processing section is slightly different depending on the type of reading scanner. Since the difference is caused by the difference of the structures of the scanners, the type of scanner which has input the scan data to the image processing section is determined in step 204. To make the data of the same photographic film which has been read the same regardless of the type of reading scanner, pre-scan image data of each film image is corrected in accordance with the determined type of scanner. That is, standardization of simulation image data is performed. In step 206, the size of each film image is determined on the basis of the pre-scan image data of each film image. In step 208 the automatic set-up calculation is performed for each film image on the basis of the pre-scan image data of film images of a plurality of frames (column 36, line 10 – column 36, line 37).

It is submitted that simulation image data is produced when image processing equivalent to the image processing for fine scan image data is performed by the image processor on pre-scan image data (column 33, lines 50-55).

It is respectfully submitted that nothing in the discussion related to steps 200 – 208 of Enomoto discloses or suggests implementing a model of a color producing process.

In further explanation of the rejection of **claim 1**, the Office Action asserts that Enomoto discloses monitoring an input to a color producing process and directs the attention of the Applicants to step 212 of Enomoto. However, Enomoto explains that on the basis of simulation image data produced in a prior step, “a simulation image indicating the completed main print obtained when only the standard image processing is performed when the main print is produced is displayed on the display unit 164 in step 212” (column 36, lines 58-63).

It is respectfully submitted that the disclosure of displaying a simulation image on a display unit (step 212) does not disclose or suggest monitoring an input to a color producing process.

The Office Action also asserts that Enomoto discloses predicting an expected color signal based on the model and monitored input and directs the attention of the Applicants to steps 224 and 226 in support of this assertion. However, step 224 is related to subjecting simulation image data to specified image processings and step 226 is related to displaying a simulation image again (column 38, lines 25-47).

It is respectfully submitted that nothing in the disclosure of processing

simulation image data according to the non-standard image processings of Enomoto (column 38, lines 28-32) discloses or suggests predicting an expected color signal based on a model and monitored input.

The Office Action further asserts that Enomoto discloses measuring an output color and directs the attention of the Applicants to step 210 in support of the assertion. However, "in step 210, pre-scan image data is fetched from the automatic set-up engine. Moreover, the conditions for the standard image processing which have been determined by the automatic set-up engine 144 and which are used to produce the main print are fetched. On the basis of the fetched conditions for the standard image processing, pre-scan image data is subjected to an image processing equivalent to the standard image processing to which fine scan image data is subjected by the image processor 140 when the main print is produced. Thus, simulation image data is produced" (column 36, lines 46-57).

It is respectfully submitted that nothing in the disclosure of producing simulation image data in step 210 of Enomoto discloses or suggests measuring an output color produced by the color producing process to produce a measured color signal.

The Office Action further asserts that Enomoto discloses comparing the measured color signal to the expected color signal to produce a color error value and directs the attention of the Applicants to steps 214 – 220 in support of this assertion. However, it is respectfully submitted that steps 214 – 220 are related to a system operator examining a displayed simulation image and either approving the image or requesting additional or different standard or non-standard image processing features or modifying a position of a frame around a displayed image (column 37, lines 15-60).

It is respectfully submitted that nothing in the description of steps 214 – 220 of Enomoto discloses or suggests comparing a measured color signal to an expected color signal to produce an error value.

The Office Action also asserts that Enomoto discloses selectively replacing the measured color signal based on the color error and directs the attention of the Applicants to step 230 in support of the assertion. The Applicants respectfully disagree. It is respectfully submitted that Enomoto discloses that if certain information is input from the operator via the keyboard, the operation is shifted to step 228. On the basis of the information input from the operator, a determination is

made as to whether or not the contents of the non-standard image processing of the specific film image which is performed when the main print is produced are acceptable. If the determination in step 228 is negated (if modification information is input), the routine moves to step 230. On the basis of the modification information input from the operator, the contents of the non-standard image processing of the specific film image which is performed when the main print is produced or modified. The routine then returns to step 224 (column 39, lines 7-19).

It is respectfully submitted that nothing in the disclosure of a step of modifying the content of processing (step 230) discloses or suggests selectively replacing a measured color signal based on a color error between the measured color signal and an expected color signal. It is respectfully submitted that Enomoto does not disclose or suggest a color signal or replacing a color signal based on a color error. Clarification is respectfully requested.

For at least each or any of the foregoing reasons, it is respectfully submitted that **claim 1**, as well as **claims 2-5** which depend therefrom, is unanticipated by Enomoto.

Additionally, in explaining the rejection of **claim 2**, the Office Action asserts that Enomoto discloses replacing a measured color signal with a predicted color signal based on an expected color signal and, again, directs the attention of the Applicants to step 230. However, as explained above, it is respectfully submitted that step 230 is related to a system operator modifying aspects of image processing after viewing a displayed image. It is respectfully submitted that Enomoto does not disclose or suggest replacing a measured color signal with a predicted color signal or doing so based on an expected color signal.

For at least the foregoing additional reasons, **claim 2** is not anticipated by Enomoto.

Regarding **claim 3**, the Office Action asserts that Enomoto discloses storing modifications and directs the attention of the Applicants to step 232. The Applicants respectfully disagree. It is respectfully requested that Enomoto explains that if information indicating "examination is okay" is input by the operator, the determination in step 228 is affirmed. Then, the routine moves to step 232. Thus, the contents of the processing set at present are stored in the memory 162 or the likes as the contents of the non-standard image processing of the specific film image which is performed when the main print is produced (column 39, lines 43-49). It is

respectfully submitted that in step 232, indications from the operator that an image is displayed correctly results in the combination of image processing features that resulted in the approved displayed image are stored in association with the image. It is further respectfully submitted that nothing in the description of step 232 discloses or suggests storing a measured color value representative of the measured color signal in association with a monitored input.

For at least the foregoing additional reasons, **claim 3** is not anticipated by Enomoto.

The Claims are Not Obvious

Claims 4 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Enomoto and in further view of Balasubramanian-1996 and Stokes. However, in explaining the rejection of **claims 4 and 5**, the Office Action stipulates that Enomoto does not disclose models used or historical data. Indeed, the Applicants have performed an electronic word search and have found no occurrence of the word -- model -- in the text of Enomoto. It is respectfully submitted that Enomoto does not disclose or suggest the use of models or historical data of a color producing process.

The Office Action asserts that Balasubramanian-1996 and Stokes disclose various models and that Balasubramanian discloses that models can be used. However, the Office Action does not suggest a motivation for combining the models of Balasubramanian or Stokes with the subject matter of Enomoto. Indeed, it is respectfully submitted that Enomoto does not disclose or suggest the use of models to predict an expected color signal, comparing the expected color signal to a measured color signal or replacing a measured color signal with historical color signals or any other kind of signal. In this regard, it is respectfully submitted that Enomoto is not analogous art with respect to the claims of the present application. Furthermore, it is respectfully submitted that the motivation to combine Balasubramanian-1996 and Stokes with the subject matter of Enomoto can only have been found in the present application. Therefore, the rejection of **claims 4 and 5** is based on impermissible hindsight.

For at least the foregoing additional reasons, **claims 4 and 5** are not anticipated and are not obvious in light of Enomoto, Balasubramanian-1996 and Stokes taken alone or in any combination.

Telephone Interview

In the interests of advancing this application to issue the Applicant(s) respectfully request that the Examiner telephone the undersigned to discuss the foregoing or any suggestions that the Examiner may have to place the case in condition for allowance.

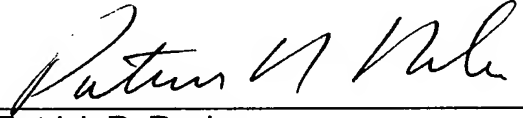
CONCLUSION

Claims 1-5 remain in the application. Withdrawal of the Restriction Requirement and reinstatement of **claims 11-19** is respectfully requested. For at least the reasons cited above, the application is in condition for allowance. Accordingly an early indication thereof is requested.

Respectfully submitted,

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3/14/05
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